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10/716,995

11/19/2003

Steve Heckeroth

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EXAMINER

TRINH, THANH TRUC

ART UNIT

PAPER NUMBER

1753

MAIL DATE

DELIVERY MODE

08/08/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/716,995

Applicant(s)

HECKEROTH, STEVE

Examiner

Thanh-Truc Trinh

Art Unit

1753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 May 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-13 and 16-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 and 16-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Terminal Disclaimer

1. The terminal disclaimer filed on 11 May 2007 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of any patent issued from U.S. Patent No. 6730841 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Remarks

2. All objections are withdrawn due to Applicant's amendment.
3. The previous rejection to claim 12 is withdrawn due to Applicant's amendment.
4. The rejection of claims 1-31 under the judicially created doctrine of obviousness-type-double patenting has been withdrawn due to the acceptance of the terminal disclaimer filed 11 May 2007.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 1, 2, 17 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to

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one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

As amended, claim 1 at line 10 and claim 17 at line 10 recite limitation "without utilizing a mechanical fastener". There is no support for this limitation in the specification originally filed. There is no portion of the disclosure describing securing at least one clamping strip without utilizing a mechanical fastener.

As amended, claim 2 at line 2 recites limitation "a plurality of batten caps and a plurality of clamping strips over said longitudinal engagement point". There is no support for this limitation in the specification originally filed. Instead, the disclosure and drawings show a batten cap is constructed as a lengthwise extending component (See page 9 line 31 bridging page 10 line 1, and Fig. 3D). There is no portion of the disclosure describing a plurality of batten caps over a longitudinal engagement point.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 10-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Knudson (US Patent 4546586).

See Figures 1-7.

Regarding claims 1, Knudson teaches providing a first (11 or 211 or 311) and a second (12 or 212 or 312) elongated web (or sheet) of metal (See col. 2 lines 18-19); disposing the first and second webs on the surface in a longitudinally aligned relationship with one another, wherein a first edge of the first web abuts a first edge of second web to form a longitudinal engagement point; securing at least one clamping strip (or fastening device 37) onto the longitudinal engagement point, wherein the clamping strips are adapted to secure the longitudinal engagement point in a stable position; securing a batten cap (38) over the clamping strip (37), wherein the batten cap contacts the first and second elongated webs in a manner to urge the first and second elongated webs toward each other. (See Figures 1 and 7). As seen in Figure 7, the first elongated web (311) and the second elongated web (312) are spaced apart from each other at the bottom. As the batten cap (38) is secured over the clamping strip (37), its intumed ends 92 and 93 pushes the sides of clamping strip (37) together, thereby urging the first and second elongated webs toward each other. Knudson teaches the limitations of the instant claim, therefore the prior art is deemed to be anticipatory.

Regarding claim 2, Knudson teaches securing a plurality of batten caps (38) and plurality of clamping strips (37) over longitudinal engagement points. (See Figure 1)

Regarding claims 10, Knudson teaches the longitudinal engagement point forms a substantially triangular shape having the surface as a base, the first edge of the first web as a first side, and the first edge of the second web as a second side. (See Figures 2, 4, 6-7)

Regarding claims 11, Knudson describes the batten cap including a first side and a second side. The first side of the batten cap has a curved portion contacting the first web (the side with inturned end flange 92) and the second side of the batten cap also has a curved portion contacting the second web (the side with inturned end flange 93). (See Figures 1, 4 or col. 4 lines 39-41).

Regarding claims 12-13, Knudson describes the curved portions of batten cap first side and second side having arcuate shapes (See Figure 4), being made of sheet metal (See col. 4 lines 39-41) and designed for snapping into the fastening device 37 (See col. 2 lines 60-66). Therefore the curved portions of the first and second sides are configured to resiliently maintain contact with the first and second webs adjacent the longitudinal engagement point. (See Figure 1, 4).

Regarding claim 16, Knudson teaches the inwardly curled ends of the batten retain in the grooves (589, 62) created between surface portions (58, 61) of the leg of the clamping strip and the sides (11, 12) of the metal sheets. (See Figures 3 and 4). In this position, the batten cap 38 creates a force to hold down the clamping strip (or fastening device 37, see col. 4 lines 39-46), and it inherently creates a force to press down the sides (11, 12) of the substantially triangular shape, thereby providing a securing means of attaching the sides of the substantially triangular shape onto the surface of the roof.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 3, 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Knudson (US Patent 4556586) in view of Nath et al. (US Patent 5092939).

Regarding claim 3, Knudson teaches mounting a flexible material onto a surface as described in claim 1. Knudson also teaches the surface can be roof deck (See col. 2 line 21).

Knudson does not teach using flexible material of a photovoltaic material,

Nath et al. teach using a photovoltaic material 44 as the flexible material. (See col. 1 lines 50-56)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize a photovoltaic material as taught by Nath et al., because it would be economical and cost-effective. (See col. 1 lines 50-56)

Regarding claims 6-9, Knudson teaches mounting a flexible material onto a roof deck surface as described in claim 1.

Knudson does not teach establishing electrical communication in a region of a soffit of the roof, in a region of a ridge of the roof and proximate a transverse extending edge of each of the webs of photovoltaic material.

Nath et al. also teach establishing electrical communication in a region of a soffit of the roof, in a region of a ridge of the roof and approximate a transverse extending edge of each of the webs of photovoltaic material (See Figures 4, 8, col. 2 lines 14-20, col. 3 lines 38-42, col. 4 lines 31-42 and col. 5 lines 18-41)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the teaching of Nath et al. for establishing electrical communication, because it would provide an electrical output from the photovoltaic material. (See col. 2 lines 14-15).

6. Claims 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Knudson in view of Nath et al and further in view of Francovitch (US Patent 4674244).

Knudson and Nath et al teach mounting flexible photovoltaic material as described in claim 3.

Neither Knudson nor Nath et al teach disposing a membrane material onto the roof deck prior to disposing the flexible webs, nor do they teach applying a sheet of membrane material upon the roof and over which are disposed the webs of photovoltaic material.

Francovitch teaches disposing a membrane material onto the roof deck prior to disposing the flexible webs, and applying a sheet of membrane material upon the roof and over which are disposed the webs of photovoltaic material. (See '244 col. 3 lines 25-40)

It would have been obvious to one having ordinary skill at the time the invention was made to modify the method of Knudson and Nath et al. by applying membrane material prior to disposing the photovoltaic material as taught by Francovitch, because it would provide an economical and effective roof and photocell construction. (See col. 2 lines 45-54)

7. Claims 17-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nath et al. (US Patent 5092939) in view of Knudson (US 4546586).

Regarding claims 17, 20-21, Nath et al. disclose a system for securing photovoltaic material onto a surface comprising flexible webs (panels 14 or 16) of photovoltaic material, wherein the first and second webs set onto the surface in a longitudinally aligned relationship with one another; at least one clamping strip (or clip 26) clamped onto the longitudinal engagement point in a stable position, each of the clamping strips adapted to secure the longitudinal engagement point; a batten cap 32

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secured over the clamping strips, wherein the batten cap 32 contacts the first and second webs in a manner to urge the first and second webs toward each other. (See Figures 2-3 or col. 3 lines 10-37).

Nath et al. do not teach the clamping strip that secures two abutting edges of the webs, nor do they teach the material of the clamping strips and the batten cap.

Knudson teaches clamping strips (37) that secures the edge of the first web (11) abutting the edge of the second web (12) to form a longitudinal engagement point. (See Figures 2, 4, 6-7).

Knudson also teaches the clamping strips being fabricated from nylons (See col. 4 lines 25-38), and batten cap from sheet metal (See col. 4 lines 39-41), which obviously includes aluminum, iron, steel, or stainless steel.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the module of Nath et al. by substituting the clamping strip the can secure abutting flexible webs, using nylon clamping strip and sheet metal batten cap as taught by Knudson, because it would connect the web together as a unitary and form a weather-tight continuous seam. (See col. 2 lines 48-49).

Regarding claim 18, Nath et al teach the first and second webs having a generally central photovoltaic area encapsulated within a polymeric material, wherein the polymeric material having both side and extending edges beyond the photovoltaic area. See col. 4 lines 60-66). A pair of contact terminals extends from a selected end of the flexible web for establishes electrical communication with the photovoltaic area. (See Figure 4)

Regarding claim 19, Nath et al. disclose that the longitudinal engagement point forming a substantially triangular shape having the surface 30 as a base, the edge of the web as a first side and the edge of the second web as a second side. (See Figure 3). In addition, when two flexible panels are bent and joined at bending site, it always creates a triangular-like shape.

Regarding claim 22, Nath et al. describe the photovoltaic material being laminated between two wider layers, EVA 62 and galvanized steel 36, to form side edges 84 and cutting areas 86. (See Figures 6, 8 and col. 4 lines 51-66). The side edges and the cutting areas do not contain the photovoltaic material, therefore they are thinner than the middle portion of the photovoltaic web. In other words, the photovoltaic webs maintain a substantially uniform thickness throughout cross section, and tapers to a thinner thickness at the edges and sides.

Regarding claim 23, Nath et al. disclose the batten cap 32 comprising a first side and the second side, wherein the first side has a curved portion contacting the first web, and the second side has a curved portion contacting the second web. (See Figure 3).

Regarding claims 24-25, Nath et al. describe the curved portions of batten cap first side and second sides have arcuate shapes (See Figure 3), and are designed to be snap-fitted (See col. 3 lines 35-37). Therefore, the first and second sides of the batten cap are configured to resiliently maintain contact with the first and second webs adjacent the longitudinal point.

Regarding claims 26-27, Nath et al describe a screw being used to secure portions of the webs to an underlying frame member (30) via the bottom section (28) of

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the clip (26) (See Figure 3). However, it would have been obvious to one skill in the art at the time the invention was made to use the screw by itself for securing a portion of the web (either the first or second web) to a surface (such as roof deck), because there is nothing unobvious about using a screw for securing means.

8. Claims 28-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nath et al in view of Knudson, and further in view of Heath (US Patent 3992847).

Nath et al. and Knudson teach securing system as described in claim 17. Nath et al. also teach using a spool (or coil 82) of photovoltaic material.

Neither Nath et al. nor Knudson teach using a ridge roller comprising sets of legs or wheels which are adapted to run along rails. Nor do they teach including a cradle adapted to rotatably support the spool.

With respect to claim 28, Heath teaches using ridge roller configured to rotatably secure a spool (or combination of a roller 60 and a roll 75) of flexible sheet material such as insulation to facilitate the drawing and sectioning of discrete lengths of the flexible material. (See '847 Figure 1, col. 3 lines 26-69)

With respect to claim 29, Heath teaches the ridge roller comprising a first set of legs (27 and 35) adapted to run along a first rail (track 97 or a purlin); a second set of legs (28 and 36) adapted to run along a second rail (track 96 or an adjacent purlin of that of the first set of legs), wherein the second rail approximately parallel to the first rail (See '847 Figures 3); and a cradle (or frame 10) adapted to rotatably support the pool. (See '847 Figures 1, 3 or col. 2 lines 36-68 and col. 4 lines 16-37).

With respect to claims 30 and 31, Heath teaches the ridge roller comprising a first sliding panel (track 97 or a purlin) having a first set of wheels (42, 44); a second sliding panel (track 96 or an adjacent purlin of that of the first purlin) having a second set of wheels (43, 45); a first locking means (51, 53) to lock first sliding panel into a desired position; a second locking means (51, 53) to lock the second sliding panel into a desired position. The first set of wheels adapted to run along a first rail, and the second set of wheels adapted to run along a second rail, wherein the second rail is approximately parallel to the first rail. (See '847 Figure 1, 3, and col. 4 lines 16-37).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Nath et al and Knudson by using a roller ridge as taught by Heath, because it would provide safe, economical and reliable methods of roofing. (See '847 col. 5 lines 4-6).

In addition, it would certainly have been obvious to one having ordinary skill in the art at the time the invention was made to have used a spool of photovoltaic material as taught by Nath et al. in place of the insulation roll as taught by Heath. Both the spool of photovoltaic material and the insulation roll are flexible material and able to form a roll or a spool, therefore they are functionally equivalent. Thus, the arts to which the reference patent belonged were reasonably pertinent to the art with which the applicant's invention dealt. See MPEP § 2141.01(a).

Response to Arguments

Applicant's arguments filed 05/29/2007 have been fully considered but they are not persuasive.

Applicant argues that the disclosed method does not entail folding and interlocking the flexible strips, or utilizing a fastener to secure the clamping strip". The Examiner is not sure what "flexible strips" are being read into the claim by Applicant, but this argument is not persuasive for the following reasons. First, the prior art, as describing an extra step such as folding and interlocking the flexible webs, still teaches all the limitations of claim 1 (See rejection of claim 1). Secondly, claim 1 uses the word "comprising", which is inclusive and does not exclude additional method steps (See MPEP § 2111.03). Thirdly, the fastener device 37 in Knudson functions very much the same as the clamping strip in the instant claims, that is to secure the longitudinal engagement point, to hold two abutting flexible webs together. Applicant further argues that the batten cap of instant application is configured to contact the flexible strips to urge them toward each other, while the batten cap of Knudson is configured to contact the device in a manner to resist the batten cap from being pulled away from the fastening device in an upward direction. The Examiner replies that, as seen in Figure 7, the first elongated web (311) and the second elongated web (312) are spaced apart from each other at the bottom. As the batten cap (38) is secured over the clamping strip (37), its inturned ends 92 and 93 pushes the sides of clamping strip (37) together, thereby urging the first and second elongated webs toward each other. Knudson teaches the limitations of the instant claim, therefore the prior art is deemed to be anticipatory.

Applicant also argues that all the references do not teach or suggest, either individually or in any combination, each and every limitation found in claim 1 or claim

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17. This argument is not persuasive. As in claim 1, Knudson teaches providing a first (11 or 211 or 311) and a second (12 or 212 or 312) elongated web (or sheet) of metal (See col. 2 lines 18-19); disposing the first and second webs on the surface in a longitudinally aligned relationship with one another, wherein a first edge of the first web abuts a first edge of second web to form a longitudinal engagement point; securing at least one clamping strip (or fastening device 37) onto the longitudinal engagement point, wherein the clamping strips are adapted to secure the longitudinal engagement point in a stable position; securing a batten cap (38) over the clamping strip (37), wherein the batten cap contacts the first and second elongated webs in a manner to urge the first and second elongated webs toward each other. (See Figures 1 and 7). As seen in Figure 7, the first elongated web (311) and the second elongated web (312) are spaced apart from each other at the bottom. As the batten cap (38) is secured over the clamping strip (37), its inturned ends 92 and 93 pushes the sides of clamping strip (37) together, thereby urging the first and second elongated webs toward each other.

Knudson teaches the limitations of the instant claim, therefore the prior art is deemed to be anticipatory. As in claim 17, Nath et al. teach flexible webs (panels 14 and 16) of photovoltaic material secured by clamping strips (clips 26) and batten cap (32) in a manner to urge the webs toward together (See Figures 2-3 or col. 3 lines 10-37).

Knudson teaches two abutting flexible webs forming an engagement point and secured by clamping strips (or fastener device 37) and batten cap (38). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the module of Nath et al. by substituting the clamping strip the can secure

abutting flexible webs as taught by Knudson, because it would connect the web together as a unitary and form a weather-tight continuous seam. (See col. 2 lines 48-49).

Applicant also argues that both Nath et al. and instant application were subjected to an obligation of assignment to the same organization, United Solar Ovonic LLC, under 35 U.S.C. 103 (c). The Examiner replies that the provision of 103 (c)(1)-(3) which disqualify prior art because of common ownership only apply if the reference is a prior art only under one or more of subsection (e), (f) and (g) of section 102. (See MPEP § 2146). However, the reference Nath et al. is prior art under 102(b), therefore it is still qualified for 103(a) rejection.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh-Truc Trinh whose telephone number is 571-272-6594. The examiner can normally be reached on 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on 571-272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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